

REMARKS

Claims 1-60 are pending and under examination in the above-identified application. Applicant has hereinabove amended claim 1, 5, 9, 12, 20, 24, 28, 31, 39, 47, 50, 58, 59, and 60. Claims 5, 9, 12, 20, 24, 28, 31, 39, 47, 50, 58, 59, and 60 have merely been amended to correct antecedent basis. Support for the Amendments to claim 1 may be found in the specification at, *inter alia*, page 10, lines 2-8; page 5, lines 3-5; and page 42, lines 12-14. Applicants maintain that the amendments to the claims raise no issue of new matter. Accordingly, applicants respectfully request entry of this Amendment.

Claim Rejected Under 35 U.S.C. §102

The Examiner stated that claims 1,9-11,20, 28-30, 39 and 47-49 stand rejected under 35 U.S.C. §102(e) as being anticipated by Ben-Haim et al. (US 6,363,279). The Examiner further stated that Ben-Haim et al. teach a method of modifying the force of contraction of a heart by applying a non-excitatory electrical field (col. 1 @ 31-45) to modify/alter/remodel the action potentials, the ionic pumps and the channels of the heart (col. 2 @ 6 - col. 3 @ 32), hence preventing arrhythmias such as ventricular fibrillation (col. 8 @ 41-48).

In response, applicants respectfully traverse the Examiner's rejection. In particular, applicants note that

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Ben-Haim et al. discusses applying a non-excitatory electric field to a heart (see, for example, Abstract, and Col. 26, lines 45-48), whereas in contrast applicants claimed subject matter is directed to applying excitatory electric fields. Specifically, claim 1 recites that the electrical signals are applied from a "pacemaker". Applicant further notes that pacemakers provide excitatory electric fields (for example, see Ben-Haim et al., Col. 8, lines 20-24) in contrast to the non-excitatory electric field discussed in Ben-Haim et al. (e.g. see Abstract). Applicants maintain that Ben-Haim et al. does not teach all the elements of applicants' claimed invention of claim 1.

Applicants note that Ben-Haim et al. specifically distinguish their non-excitatory signal from an excitatory signal of a pacemaker (see col. 9, lines 10-15). Ben-Haim et al. nowhere disclose the use of excitatory signals from a pacemaker to be applied through linked multiple electrode pairs to a surface of the heart to remodel gap junctions, as presently claimed in claim 1. Similarly, Ben-Haim et al. do not disclose connecting excitatory signals from a pacemaker to a heart surface through linked multiple electrode pairs to alter the effective refractory period (claim 20), or to induce ion channel remodeling to alter contractile patterns and to prevent arrhythmias (claim 39). Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

Although Ben-Haim et al. do discuss (in col. 9, line 30-36) using an excitatory signal from a pacemaker in combination

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with the non-excitatory control signal, Ben-Haim et al. do not disclose these signals would be connected to the heart through linked multiple electrode pairs. While Ben-Haim et al., in col. 29, lines 11-18, do discuss using more than one pair of electrodes, the signals used are for the purpose of control, not for remodeling, as is presently claimed.

Claim Rejected Under 35 U.S.C. §103

The Examiner stated that claims 2, 5, 12, 13, 15, 21, 24, 31, 32, 34, 40, 43, 50, 51, 53 and 58-60 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ben-Haim et al. (US 6,363,279) in view of Edwards et al. (US 5,681,308).

In response, applicants respectfully traverse the Examiner's rejection. In particular, applicants note that even if one were to combine Ben-Haim et al. with Edwards et al. the combination would not teach applying an excitatory electric field from a pacemaker to a heart through linked multiple electrode pairs, as claimed in independent claims 12, 31, 50 and 58-60. Applicants maintain that the cited references, even if combined as suggested by the Examiner, do not teach all the elements of applicants' claimed invention. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

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The Examiner stated that claims 3, 4, 14, 17-19, 22, 23, 33, 36-38, 41, 42, 52 and 55-57 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ben-Haim et al. (US 6,363,279) in view of Edwards et al. (5681308) and further in view of Dahl et al. (US 5,203,348).

In response, applicants respectfully traverse the Examiner's rejection. In particular, applicants note that even if one were to combine Ben-Haim et al. with Edwards et al., and Dahl et al. the combination would not teach applying an excitatory electric field to a heart, as detailed by applicants hereinabove, in contrast to applicants claimed subject matter. Applicants maintain that the cited references combined do not teach all the elements of applicants' claimed invention. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

The Examiner stated that claims 7, 8, 26, 27, 45 and 46 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ben-Haim et al. (US 6,363,279) in view of Dahl et al. (US 5,203,348).

In response, applicants respectfully traverse the Examiner's rejection. In particular, applicants note that even if one were to combine Ben-Haim et al. with Dahl et al., the combination would not teach applying an excitatory electric field to a heart, as detailed by applicants hereinabove, in contrast to applicants claimed subject matter. Applicants maintain that the cited references

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combined do not teach all the elements of applicants' claimed invention. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

The Examiner stated that claims 6, 16, 25, 35, 44 and 54 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ben-Haim et al. (US 6,363,279) in view of Edwards et al. (US 5,681,308) and further in view of Ideker (US 5,873,896).

In response, applicants respectfully traverse the Examiner's rejection. In particular, applicants note that even if one were to combine Ben-Haim et al. with Edwards et al. and Ideker et al., the combination would not teach applying an excitatory electric field to a heart, as detailed by applicants hereinabove, in contrast to applicants claimed subject matter. Applicants maintain that the cited references combined do not teach all the elements of applicants' claimed invention. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

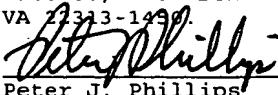
If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorneys invite the Examiner to telephone them at the number provided below.

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No fee is deemed necessary in connection with the filing of this Amendment. However, if any fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,

Peter Phillips

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22343-1450  
  
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